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UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte WERNER KNEBEL and RAFAEL STORZ

Appeal 2008-2841
Application 10/713,887
Technology Center 2800

Decided: September 3, 2008

Before DEMETRA J. MILLS, LORA M. GREEN, and
RICHARD M. LEOVITZ, *Administrative Patent Judges*.

GREEN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the Examiner's final rejection of claims 1-5 and 8-20. We have jurisdiction under 35 U.S.C. § 6(b).

STATEMENT OF THE CASE

The claims are directed to a scanning microscope and a method for scanning a sample. Claims 1 and 12 are representative of the claims on appeal, and read as follows:

1. A scanning microscope having a detector, arranged in a detection beam path, for receiving detection light proceeding from a sample, a monitoring means that measures the light power level of the detection light, and an optical shutter means between the sample and the detector with which the detection beam path can be blocked based on the light power level of the detection light exceeding a definable threshold.

12. A method for scanning a sample, comprising:
providing a microscope having a detector disposed in a detection beam path and configured to receive detection light proceeding from a sample;
measuring the light power level of the detection light using a monitoring means; and
blocking the detection beam path, when the light power level of the detection light exceeds a definable threshold, using an optical shutter means disposed between the sample and the detector.

The Examiner relies on the following references:

Hakamata	US 5,065,008	Nov. 12, 1991
Hanninen	US 5,523,573	Jun. 4, 1996

We reverse.

ISSUE (Anticipation)

The Examiner contends that claims 1, 3-5, 8-12, and 14-20 are anticipated by Hakamata.

Appellants contend that Hakamata does not control the optical shutters based on a light power level detected by a monitoring means.

Thus, the issue on Appeal is: Does Hakamata teach the use of optical shutters that are controlled based on the light power level of the detection light exceeding a definable threshold detected by a monitoring means?

CLAIM CONSTRUCTION

Both of the independent claims use the language “monitoring means” and “optical shutter means.” We do not interpret “optical shutter means” as invoking 35 U.S.C. § 112, sixth paragraph, as an optical shutter in and of itself, has structure, and is not a statement of function. *See, e.g., Sage Prods. Inc. v. Devon Indus., Inc.*, 126 F.3d 1420, 1427 (Fed. Cir. 1997)(noting that the use of the term “means” gives rise to a presumption that the means-plus-function limitation is intended, but is not conclusive, for if there is no corresponding function, section 112, sixth paragraph is not implicated). “Monitoring means,” however, stand on different footing, and we interpret that phrase as invoking 35 U.S.C. § 112, sixth paragraph.

Under § 112, sixth paragraph, means-plus-function claim language must be construed by “look[ing] to the specification and interpret[ing] that language in light of the corresponding structure, material, or acts described therein, and equivalents thereof, to the extent that the specification provides such disclosure.” *In re Donaldson Co., Inc.*, 16 F.3d 1189, 1193 (Fed. Cir. 1994) (en banc). Moreover, 37 C.F.R. § 41.37 (c)(1)(v) states:

For each independent claim involved in the appeal and for each dependent claim argued separately under the provisions of paragraph (c)(1)(vii) of this section, every means plus function and step plus function as permitted by 35 U.S.C. 112, sixth paragraph, must be identified and the structure, material, or acts described in the specification as corresponding to each claimed

function must be set forth with reference to the specification by page and line number, and to the drawing, if any, by reference characters.

Appellants reference 43 in Figure 1, and the Specification page 6, line 27 to page 7, line 1, in regard to the “monitoring means.” (App. Br. 2.)

Figure 1 of the instant disclosure is reproduced below:

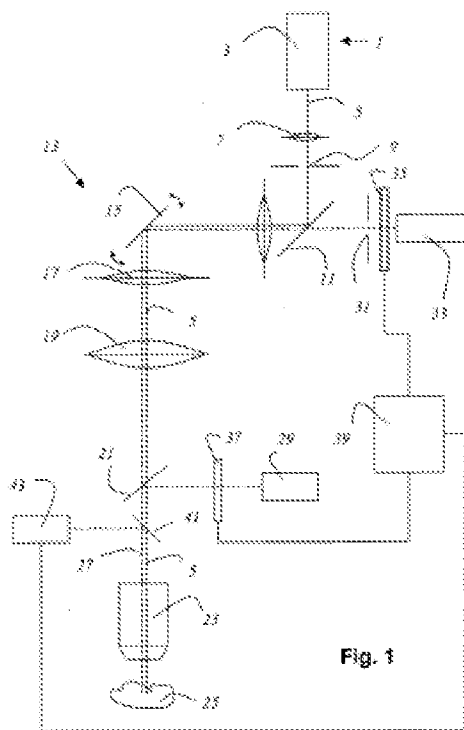


Figure 1 shows a scanning microscope according to the invention (Spec. 5).

According to the Specification:

A shutter means 37 is arranged in front of non-descan detector 29, and a further shutter means 35 in front of descan detector 33. Shutter means 37, 35 are embodied as acoustooptical filters (AOTF) which are controlled by a control means 39 that is embodied as an electronic circuit. The detection beam path is automatically opened up by the control means before the beginning of a scanning operation, and blocked at the end of the scanning operation. A small portion of detection light 27 is

directed by a further beam splitter 41 to a monitoring means 43 that is embodied as a photodiode, which measures the light power level of the detection light and transmits it in the form of a measured signal to control means 39. The detection beam path is automatically blocked by control means 39 if the light power level of the detection light exceeds a defined threshold.

(Spec. 6-7.)

Thus, we interpret “monitoring means” as a photodiode that measures the light power level of the detection light.

FINDINGS OF FACT

FF1. Claims 1, 3-5, 8-12, and 14-20 stand rejected under 35 U.S.C.

§ 102(b) as being anticipated by Hakamata.

FF2. As to the disputed limitation, the Examiner finds that Hakamata teaches a scanning microscope having “an optical shutter (23) means between the sample and the detector with which the detection beam path can be blocked (col. 7 lines 54-67),” wherein “the detection beam path is automatically blockable when the light power level of the detection light exceeds a definable threshold (col. 8 lines 31-39).” (Ans.¹ 4.) The Examiner also finds that Hakamata “discloses a means for monitoring the light power level of the detection light and extrapolates future change over the time in the detection light power level (col. 8 line 61-col. 9 line 7).” (*Id.*)

FF3. Hakamata is drawn to “a transmission type confocal scanning microscope wherein a photodetector need not be moved in synchronization

¹ All references to the Answer (Ans.) are to the Examiner’s Answer mailed May 30, 2007.

with the deflection of a light beam, which is irradiated to a sample, or the light beam, which has passed through the sample, need not be deflected in synchronization with the scanning of the sample.” (Hakamata col. 2, ll. 60-66.)

FF4. As to the portion of Hakamata relied upon by the Examiner to teach the monitoring means, Hakamata teaches:

The scanning with the light spot formed at the point P may often become nonuniform in a single microscope with the passage of time or among different microscopes due to, for example, fluctuations in the characteristics of the AOD 14 and the vibrating mirror 16. In such cases, the relationship between the synchronizing signal, which is fed to the liquid crystal panel operating circuit 24, and the address of the liquid crystal shutter 23a, which is set to the open state by the liquid crystal panel operating circuit 24, may be changed in accordance with the nonuniformity of the scanning. In this manner, the liquid crystal shutter 23a corresponding to the position, at which the point image Q is formed at any given instant, can be accurately set to the open state.

In this embodiment, the sample supporting member 19 can be moved by the vertical movement mechanism 21 in the directions indicated by the arrow Z, which directions are normal to the main scanning directions indicated by the arrow X and the sub-scanning directions indicated by the arrow Y. The two-dimensional scanning with the light spot formed at the point P is carried out each time the sample 20 is moved a predetermined distance along the directions indicated by the arrow Z. In this manner, only the information at the focusing plane can be detected by the photodetector 25. The signal S generated by the photodetector 25 may be stored on a frame memory. In this manner, a signal can be obtained which represents the image information at every focusing plane within the range of movement of the sample 20 along the directions indicated by the arrow Z.

(Hakamata, col. 8, l. 61 –col. 9, l. 7.)

FF5. As to the portion of Hakamata relied upon by the Examiner to the limitation that the detection beam path is automatically blockable when the light power level of the detection light exceeds a definable threshold means, Hakamata teaches:

In accordance with the synchronizing signal, the liquid crystal panel operating circuit 24 operates the liquid crystal panel 23 in synchronization with the main scanning and the sub-scanning with the light spot formed at the point P such that a liquid crystal shutter 23a corresponding to the position, at which the point image Q is formed at any given instant, is set to the open state. In this manner, the liquid crystal shutters 23a, 23a, ... are set to the open state one after another. Specifically, in FIG. 2, m number of the liquid crystal shutters 23a, 23a, ..., which stand one behind another in the first row along the X direction, are first set to the open state one after another.

(Hakamata col. 8, ll. 31-39.)

FF5. Thus, Hakamata does teach a photodetector, but does not teach a photodiode that measures the light power level of the detection light, nor does it teach an optical shutter means that is blocked based on the measured light power.

PRINCIPLES OF LAW

In order to establish anticipation, every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim. *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed. Cir. 2001).

ANALYSIS

As noted above in the claim analysis section, we interpret “monitoring means” as a photodiode that measures the light power level of the the detection light. The sections of Hakamata relied upon by the Examiner do not teach such a structure, nor can we find such a teaching in Hakamata. Thus, the Examiner has failed to set forth a prima facie case of anticipation, and the rejection is reversed.

CONCLUSION

Because we conclude that Hakamata does not teach the use of optical shutters that are controlled based on the light power level of the detection light exceeding a definable threshold detected by a monitoring means, we reverse the rejection of claims 1, 3-5, 8-12, and 14-20 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Hakamata.

Moreover, the Examiner rejects claims 2 and 13 under 35 U.S.C. § 103(a) as being obvious over the combination of Hakamata and Hanninen. Hanninen is cited only for teaching a non-descan detector (Ans. 5-6).

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Thus, Hanninen does not remedy the deficiencies of Hakamata, and we reverse this rejection as well.

REVERSED

Ssc:

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